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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,147	08/01/2003	Richard L. Anglin JR.	CHP9801CIPA-2003	5454

7590 11/14/2006

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EXAMINER	
WANG, TED M	
ART UNIT	**PAPER NUMBER**
2611	

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/633,147	Applicant(s) ANGLIN, RICHARD L.
	Examiner Ted M. Wang	Art Unit 2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Priority

1. This application claims the benefit of prior-filed application No. 09/212,339 under 35 U.S.C.120 , 121, or 365(c) or under 35 U.S.C. 119(e) and is not entitled to the benefit of the prior-filed application because the prior-filed application was abandoned on 11/08/2002 that was before the filing date (08/01/2003) of the instant application. Applicant is required to delete the reference to the prior-filed application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Anglin (WO 01/01648 A1).

- With regard claim 1, Anglin discloses a method of extracting information from a plurality of transmitted chirp radio frequency waveforms comprising the steps of:

    receiving a plurality of chirp radio frequency waveforms (Fig.5 elements 28, page 5 lines 24-25 and page 17 claim 1);

removing noise from said received chirp radio frequency waveforms (Fig.5 elements 40, page 5 lines 27-28, page 17 claim 1); and

extracting information from said received chirp radio frequency waveforms after said noise is removed (Fig.5 elements 32 and 42-48, page 5 lines 28-30, page 17 claim 1).

- With regard claim 2, Anglin further discloses the step of conditioning a plurality of intermediate frequency pulses which result from the removal of said noise (Fig.5 elements 42-48, page 5 lines 29-30) to form a square wave digital output (Fig.5 element 32, page 5 line 30) that correlates with said transmitted chirp radio frequency waveforms (page 5 lines 29-30, page 17 claim 2).
- With regard claim 3, Anglin further discloses in which noise is removed from said chirp radio frequency waveforms using a Kalman filter (Fig.5 elements 40, page 5 line 27, page 17 claim 3).
- With regard claim 4, Anglin further discloses in which the step of extracting information from said received chirp radio frequency waveforms after said noise is removed includes the following steps:

  down converting said chirp radio frequency waveform by subtracting f_o from said chirp radio frequency waveform to produce a series of U and D or UD and DU pulses containing frequencies between 0 and Δf (page 9 lines 1-5 and page 17 claim 7);

sending said series of U and D or UD and DU pulses to a frequency-to-voltage converter (Fig.7 and 8 element 56, page 9 lines 8-10 and page 17 claim 7); and

differentiating (Fig.7 element 60) the resulting triangular shaped pulses to produce square pulses, positive for the U chirp and negative for the D chirp (page 9 lines 13-19 and page 17 claim 7).

- With regard claim 5, Anglin further discloses in which the step of extracting information from said received chirp radio frequency waveforms after said noise is removed includes the following steps:

  determining (Fig.10 element 76) the zero crossings of received chirp radio frequency waveform (page 10 lines 5-7 and page 18 claim 8); and

  measuring and comparing the zero crossing intervals to the known patterns for U/D (Fig.10 element 50) or UD/DU (Fig. 10 element 52) chirps (page 9 lines 20-24 and page 18 claim 8).

- With regard claim 6, Anglin further discloses in which the step of extracting information from said received chirp radio frequency waveforms after said noise is removed includes the following steps:

  measuring the first and last zero crossing intervals for U/D (page 10 line 19 and page 18 claim 9); and measuring the first and middle crossing intervals for UD/DU (page 10 line 20 and page 18 claim 9).

- With regard claim 7, Anglin further discloses in which the step of extracting information from said received chirp radio frequency waveforms after said noise is removed includes the following steps:

  integrating (Fig. 12 element 80) said chirp radio frequency waveform (page 10 lines 26-27 and page 18 claim 10); and

  determining the pulse value by evaluating the negative or positive integral that results (page 10 lines 27-32 and page 18 claim 10).

- With regard claim 8, Anglin further discloses in which the step of extracting information from said received chirp radio frequency waveforms after said noise is removed includes the following steps:

  rectifying (Fig. 14 element 96) said received chirp radio frequency waveform (page 11 line 12 and page 18 claim 11);

  integrating (Fig. 14 element 80) said received chirp radio frequency waveform (Fig. 14 elements 10, 14 and 18) to give said received chirp radio frequency waveform a pulse corresponding to a "one" pulse (page 11 lines 12-13 and page 18 claim 11).

- With regard claim 9, Anglin further discloses in which the step of extracting information from said received chirp radio frequency waveforms after said noise is removed includes the following steps:

  splitting said received chirp radio frequency waveform (page 11 line 16 and page 18 claim 12);

  sending said received chirp radio frequency waveform to both a "one" comparison circuit (Fig.15 elements 100, 104 and 80 and page 11

line 17 and page 18 claim 12) and "zero" comparison circuit (Fig.15 elements 100, 96 and 80 and page 11 line 17 and page 18 claim 12);

subtracting (Fig.15 element 100) said received chirp radio frequency waveform from the appropriate known "one" chirp wave form (page 11 lines 18-20 and page 18 claim 12);

rectifying (Fig.15 element 104) and integrating (Fig.15 element 80) the voltage difference (page 11 lines 19-20 and page 18 claim 12);

subtracting (Fig.15 element 100) said received chirp radio frequency waveform from the appropriate known "zero" chirp waveform (page 11 lines 21-23 and page 18 claim 12); and

rectifying (Fig.15 element 96) and integrating (Fig.15 element 80) the voltage difference (page 11 lines 22 -23 and page 18 claim 12).

- With regard claim 10, Anglin further discloses in which the step of extracting information from said received chirp radio frequency waveforms after said noise is removed includes the following steps:

  splitting said received chirp radio frequency waveforms into a first signal and a second signal (page 11 lines 31-32 and page 19 claim 13);

  feeding said first and said second signals to a "one" comparison circuit and to a "zero" comparison circuit (page 11 line 32 and page 19 claim 13);

  adding (Fig.17 element 114 (upper)) said first signal to an appropriate known "one" chirp waveform in said "one" comparison circuit (page 11 line 33 and page 19 claim 13);

rectifying (Fig.17 element 96 (upper)) the resulting voltage sum from the "one" comparison circuit (page 12 line 1 and page 19 claim 13);

integrating (Fig.17 element 80 (upper)) the rectified signal from the "one" comparison circuit (page 12 line 1 and page 19 claim 13);

feeding the integrated signal from the "one" comparison circuit to a first bistable device (Fig.17 element 76 (upper)) that is set to trigger at a voltage between two possible outputs (page 12 lines 2-4 and page 19 claim 13);

adding (Fig.17 element 114 (lower)) said second signal to an appropriate known "zero" chirp waveform (Fig.17 element 108 (lower)) in said "zero" comparison circuit (page 12 lines 5-6 and page 19 claim 13);

rectifying (Fig.17 element 96 (lower)) the resulting voltage sum from the "zero" comparison circuit (page 12 line 6 and page 19 claim 13);

integrating (Fig.17 element 80 (lower)) the rectified signal from the "zero" comparison circuit (page 12 line 6 and page 19 claim 13); and

feeding the integrated signal from the "zero" comparison circuit to a second bistable device (Fig.17 element 76 (lower)) that is set to trigger at a voltage between two possible outputs (page 12 lines 7-9 and page 19 claim 13).

- With regard claim 11, Anglin further discloses in which the step of extracting information from said received chirp radio frequency waveforms after said noise is removed includes the following steps:

adding (Fig. 19 element 112) said received chirp radio frequency waveforms to a plus chirp waveform (Fig. 19 element 18, page 12 line 18 and page 19 claim 14);

rectifying the sum (Fig. 19 element 96, page 12 line 18 and page 19 claim 14); and

integrating the rectified signal (Fig. 19 element 80, page 12 line 18 and page 19 claim 14).

- With regard claim 12, Anglin further discloses in which the step of extracting information from said received chirp radio frequency waveforms after said noise is removed includes the following steps:

feeding said received chirp radio frequency waveforms (Fig. 20 elements 50 and 52) through a non-overlapping notch filter (Fig. 20 element 120) that covers the chirp frequency interval (page 12 lines 23-24 and page 20 claim 15);

rectifying the output of said filter (Fig. 20 element 96, page 12 lines 25 and page 20 claim 15);

integrating the rectified signal (Fig. 20 element 80, page 12 line 25 and page 20 claim 15);

conveying the integrated signal into an AND junction (Fig. 20 element 88) which is gated by a generated signal (Fig. 20 element 102) that is timed to the sweep of a chirp (page 12 lines 25-26 and page 20 claim 15);

conveying the output of the AND junction into an AND gate array so that only if all of the frequency inputs occur in the proper order at the proper interval, a pulse corresponding to a "one" chirp is produced (page 12 lines 26-28 and page 20 claim 15).

- With regard claim 13, Anglin further discloses in which the step of extracting information from said received chirp radio frequency waveforms after said noise is removed includes the following steps:

  feeding said received chirp radio frequency waveforms (Fig. 20 elements 50 and 52) through a non-overlapping notch filter (Fig. 20 element 120) that covers the chirp frequency interval (page 12 lines 23-24 and page 20 claim 16);

  rectifying the output of said filter (Fig. 20 element 96, page 12 lines 25 and page 20 claim 16);

  integrating the rectified signal (Fig. 20 element 80, page 12 line 25 and page 20 claim 16);

  conveying the integrated signal into an AND junction (Fig. 20 element 88) which is gated by a generated signal (Fig. 20 element 102) that is timed to the sweep of a chirp (page 12 lines 25-26 and page 20 claim 16);

  conveying the output of the AND junction into an AND gate array so that only if all of the frequency inputs occur in the proper order at the proper interval, a pulse corresponding to a "zero" chirp is produced (page 12 lines 26-30 and page 20 claim 16).

- With regard claim 14, Anglin further discloses in which the step of extracting information from said received chirp radio frequency waveforms after said noise is removed includes the following steps:

  downshifting said received chirp radio frequency waveforms from the base frequency (page 13 line 7 and page 20 claim 17).

- With regard claim 15, Anglin further discloses in which the step of extracting information from said received chirp radio frequency waveforms after said noise is removed includes the following steps:

  splitting said received chirp radio frequency waveforms into N channels (page 13 lines 12-13 and page 20 claim 18);

  successively down shifting each of said channels by

  $f_o + k\ (\Delta f/N)$ using an oscillator (Fig.22 element 126) and a frequency multiplier (Fig.22 element 128, page 13 lines 13-14 and page 20 claim 18);

  conveying the resulting signal through a notch filter (Fig.22 element 120) with $\Delta f/N$ width, with k running from 1 to N (page 13 lines 13-14 and page 20 claim 18);

  rectifying (Fig.22 element 96) and integrating (Fig.22 element 80) the output of each channel (page 13 line 15 and page 20 claim 18); and

  feeding the output of all the channels into a timed AND gate array (Fig.22 element 88) so that only if all of the frequency inputs occur in the proper order at the proper interval is the output a pulse corresponding to a "one" chirp (page 13 lines 16-17 and page 20 claim 18).

- With regard claim 16, Anglin further discloses in which the step of extracting information from said received chirp radio frequency waveforms after said noise is removed includes the following steps:

  splitting said received chirp radio frequency waveforms into N channels (page 13 lines 12-13 and page 21 claim 19);

  successively down shifting each of said channels by

  $f_o + k\ (\Delta f/N)$ using an oscillator (Fig.22 element 126) and a frequency multiplier (Fig.22 element 128, page 13 lines 13-14 and page 21 claim 19);

  conveying the resulting signal through a notch filter (Fig.22 element 120) with $\Delta f/N$ width, with k running from 1 to N (page 13 lines 13-14 and page 21 claim 19);

  rectifying (Fig.22 element 96) and integrating (Fig.22 element 80) the output of each channel (page 13 line 15 and page 21 claim 19); and

  feeding the output of all the channels into a timed AND gate array so that only if all of the frequency inputs occur in the proper order at the proper interval is the output a pulse corresponding to a "zero" chirp (page 13 lines 16-19 and page 21 claim 19).

- With regard claim 17, Anglin further discloses in which the step of extracting information from said received chirp radio frequency waveforms after said noise is removed includes the following steps:

  conveying said received chirp radio frequency waveforms to a filter (Fig.23 element 130) whose output is linearly proportional to the frequency

to produce a voltage signal whose magnitude is proportional to the input frequency (page 13 lines 22-24 and page 21 claim 20);

passing said voltage signal through an envelope detector (Fig.23 element 132, page 13 lines 24-25 and page 21 claim 20); and

differentiating (Fig.23 element 60) the output of said envelope detector to produce square pulses (Fig.23 element 46) of appropriate sign (page 13 lines 25-26 and page 21 claim 20).

- With regard claim 18, Anglin further discloses in which the step of extracting information from said received chirp radio frequency waveforms after said noise is removed includes the following steps:

  conveying said received chirp radio frequency waveforms to a filter (Fig.24 element 130) whose output is linearly proportional to the frequency to produce a voltage signal whose magnitude is proportional to the input frequency (page 13 lines 22-24 and page 21 claim 21);

  passing said voltage signal through an envelope detector (Fig.24 element 132, page 13 lines 27-28 and page 21 claim 21); and

  using the output of said envelope detector to trigger a bistable device (Fig.24 element 76) to produce positive and negative pulses (page 13 lines 28-29 and page 21 claim 21).

- With regard claim 19, Anglin further discloses in which the step of extracting information from said received chirp radio frequency waveforms after said noise is removed includes the following steps:

splitting said received chirp radio frequency waveforms into a first signal and a second signal (page 14 line 3 and page 22 claim 22);

feeding said first signal to a delay element (Fig.25 element 90) which introduces a delay Δt (page 14 lines 3-4 and page 22 claim 22);

multiplying (Fig.25 element 126) said delayed first signal by said received chirp radio frequency waveforms (page 14 lines 4-5 and page 22 claim 22); and

feeding the product to an envelope detector (Fig.25 element 132) to generate a signal that is proportional to the chirp frequencies times the delay (page 14 lines 5-6 and page 22 claim 22).

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is 571-272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ted M. Wang

Ted M Wang
Examiner
Art Unit 2611